

## TECHNICAL DATA

# Fluke 831 Laser Shaft Alignment Tool



## Key features

- Fast, easy, and precise alignment that adapts to your needs.
- Rugged build and the highest-in-class IP rating.
- Single-laser technology for the fastest, most accurate laser alignment.
- Cloud connection enables real-time collaboration.
- Use up to 8 measurement points to achieve precision alignment on vertical machines.

## Product overview: Fluke 831 Laser Shaft Alignment Tool

### Precision laser alignment made easy

The rugged Fluke 831 has an intuitive guided user interface that enables quick and complete shaft alignment without advanced training or complicated programs. And while it's easy to use, laser alignment with the Fluke 831 is powerful enough for the skilled technician. You can cover more of your machines with all the functionality needed on the plant floor, from thermal growth to user defined tolerances and more.

### Reduce costs by avoiding downtime

Misalignment causes at least half of all damage to rotating machinery, studies show. Instead of fixing the problem, teams often just treat the symptoms of misalignment and replace bearings, couplings, and seals because they think alignment takes too long.

Contrary to expectations, laser alignment can be fast and easy. So, every machine that is repaired and overhauled should be

aligned – not just a few. Teams that embrace laser alignment can save thousands of dollars per year by avoiding downtime and energy waste and reducing the number of bearings and seals they have to replace.

## Specifications: Fluke 831 Laser Shaft Alignment Tool

### Computer

| General specifications           |                                                                                                                                                                                                                                 |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CPU                              | Processor: Exynos 9810, 2.7GHz, 1.7GHz Octa-Core<br>Memory: 4 GB RAM, 64 GB Flash memory                                                                                                                                        |
| Display                          | Technology: TFT<br>Integrated light sensor for automated adjustment of the brightness to the display according to the lighting conditions hence extending battery life.<br>Resolution: 1920 x 1200 Pixel<br>Size: 203.1 mm (8") |
| Connectivity                     | Wi-Fi: 802.11 a/b/g/n/ac/ax 2.4G+5GHz, HE80, MIMO, 1024-QAM.<br>Wireless: 5.0<br>RFID: NFC                                                                                                                                      |
| Camera                           | Main camera resolution: 13.0 MP, Auto Focus<br>Front camera resolution: 5.0 MP                                                                                                                                                  |
| Environmental protection         | IP 68: dustproof, submersible 1.5 m                                                                                                                                                                                             |
| Temperature range                | Operation: -20°C to 50°C (-4°F to 122°F)                                                                                                                                                                                        |
| Battery                          | Battery Type: Li-Ion rechargeable battery 3.8 V / 5<br>3.8 V / 5050 mAh / 19.2 Wh Operating time: Up to 11 hours                                                                                                                |
| Dimensions (without hand straps) | Approx. 256 x 149 x 35 mm (10 5/64" x 5 55/64" x 1 3/8")                                                                                                                                                                        |
| Weight (without hand straps)     | Approx. 710 g (1.6 lbs)                                                                                                                                                                                                         |

### Reflector (prism)

| General specifications       |                                                 |
|------------------------------|-------------------------------------------------|
| Type                         | 90° roof prism                                  |
| Accuracy (average)           | > 99%                                           |
| Environmental protection     | IP 67 (submersible, dustproof)                  |
| Temperature range            |                                                 |
| Operation temperature range: | -20°C to 60°C (-4°F to 140°F)                   |
| Storage temperature range:   | -20°C to 80°C (-4°F to 176°F)                   |
| Dimensions                   | Approx. 100 x 41 x 35 mm (4" x 1 5/8" x 1 3/8") |
| Weight                       | Approx. 65 g (2.3 oz)                           |

## Sensor

| General specifications       |                                                                                                                                                                       |
|------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Measurement principle        | Coaxial, reflected laser beam                                                                                                                                         |
| LED indicators               | 1 LED for laser beam status and battery status<br>1 LED for wireless communication                                                                                    |
| Power supply                 |                                                                                                                                                                       |
| Battery                      | Lithium-Ion rechargeable battery 3.7 V / 5 Wh                                                                                                                         |
| Operating time               | 10 hours (continuous use)                                                                                                                                             |
| Charging time                | Using charger - 2.5 h for up to 90%<br>3.5 h for up to 100%<br>Using USB port – 3 h for up to 90%<br>4 h for up to 100%                                               |
| Environmental protection     |                                                                                                                                                                       |
| IP 65:                       | Dustproof and water jets resistant, shockproof                                                                                                                        |
| Relative humidity:           | 10% to 90% (non-condensing)                                                                                                                                           |
| Ambient light protection     | Yes                                                                                                                                                                   |
| Temperature range            |                                                                                                                                                                       |
| Operation temperature range: | -10°C to 50°C (14°F to 122°F)                                                                                                                                         |
| Charging temperature range:  | 0°C to 40°C (32°F to 104°F)                                                                                                                                           |
| Storage temperature range:   | -20°C to 60°C (-4°F to 140°F)                                                                                                                                         |
| Dimensions                   | Approx. 105 x 69 x 55 mm<br>(4 9/64" x 2 23/32" x 2 11/64")                                                                                                           |
| Weight                       | Approx. 210 g (7.4 oz) with dust cap                                                                                                                                  |
| Detector                     |                                                                                                                                                                       |
| Measurement range            | Unlimited, dynamically extendible                                                                                                                                     |
| Resolution                   | 1 µm (0.04 mil) and angular 10 µRad                                                                                                                                   |
| Error (avg)                  | < 2%                                                                                                                                                                  |
| Inclinometer                 |                                                                                                                                                                       |
| Measurement range            | 0° to 360°                                                                                                                                                            |
| Resolution                   | 0.1°                                                                                                                                                                  |
| Error (avg)                  | 0.3% full scale                                                                                                                                                       |
| Laser                        |                                                                                                                                                                       |
| Type                         | Semiconductor laser diode                                                                                                                                             |
| Wavelength                   | 630 - 680 nm (red, visible)                                                                                                                                           |
| Safety class                 | Class 2 according to IEC 60825-1:2014. The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. |
| Beam power                   | < 1 mW                                                                                                                                                                |

|                              |                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Beam divergence              | < 0.3 mrad                                                                                                                                                                                                                                                                                                                                           |
| Safety precautions           | Do not look into laser beams.                                                                                                                                                                                                                                                                                                                        |
| External interface           | Wireless communication                                                                                                                                                                                                                                                                                                                               |
| Transmission distance        | Up to 30 m (98 ft) direct line of sight                                                                                                                                                                                                                                                                                                              |
| CE Conformity                | Hereby, Fluke declares that the radio equipment contained in this product is in compliance with Directive 2014/53/ EU. The full text of the EU declaration is available at the following internet address: <a href="https://www.fluke.com/en-us/support/declaration-of-conformity">https://www.fluke.com/en-us/support/declaration-of-conformity</a> |
| Country radio certifications | Visit <a href="https://www.fluke.com">fluke.com</a> for more information.                                                                                                                                                                                                                                                                            |

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